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TECHNOLOGY BASE INITIATIVES

BRIEFING TO APBI

DR. RICHARD E. McCLELLAND

OCTOBER 2004

TARDEC

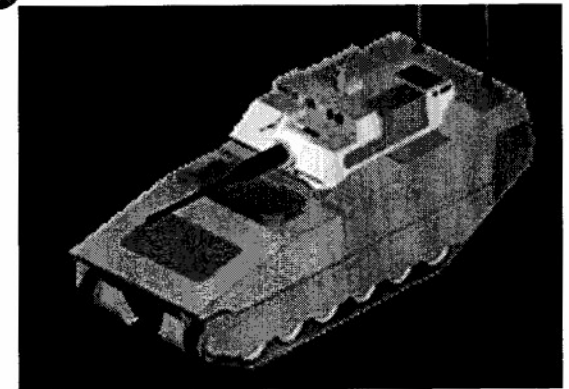
U.S. ARMY TANK-AUTOMOTIVE RESEARCH DEVELOPMENT AND ENGINEERING CENTER

SUPERIOR TECHNOLOGY FOR A SUPERIOR ARMY

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Current Operations

Army Transformation



TARDEC

U.S. ARMY TANK-AUTOMOTIVE RESEARCH DEVELOPMENT AND ENGINEERING CENTER

FY O5 CONTRACT ACTIONS

Existing Contracts / 05 Actions

SURVIVABILITY TECHNOLOGIES

•Active Protection Testing	\$500K	EMRTC
•FCLAS Development	\$11.5M	Chang Industries
•Active Protection Modeling	\$100K	Gleason
•Engineering Support	\$250K	GS Engineering
•Engineering Support	\$500K	Optimetrix
•Active Protection Analysis	\$250K	MIT / Lincoln Labs
•Engineering Support	\$300K	Booz Allen
•Engineering Support	\$100K	Signal Solutions

FY 05 CONTRACT ACTIONS

Existing Contracts / 05 Actions

SURVIVABILITY TECHNOLOGIES – CONTINUED...

•Armor Material Property	\$100K	Univ of Hawaii
•Armor Materials Support	\$300K	Sandia National Lab
•Adv Joining NDE Concepts	\$300K	Michigan State Univ
•Armor Material Research	\$100K	ARA
•Armor Modeling and Effects	\$1.3M	SWRI
•Assymetric Thyristor Switch	\$750K	Silicon Power Corp.
•Adv ATD Structure	\$1.2M	UDLP
•FCS Laser Hardened Vision	\$350K	Boeing / McD-Douglas
•Signature Modeling Validation	\$1.5M	Thermo Analytics
•Assured Mobility Motion Sim	\$120K	Dynamic Animation Sys

FY 05 CONTRACT ACTIONS

Existing Contracts / 05 Actions

VETRONICS TECHNOLOGIES

•Vetronics Tech Integration	\$5.25M	GDLS
•Remote Imaging for UGVs	\$500K	Lockheed Martin
•Autonomous Urban SUGV	\$487K	iRobot
•ODIS	\$2.4M	Kuchera

FY 05 CONTRACT ACTIONS

Existing Contracts / 05 Actions

WATER TECHNOLOGIES

•Water from Exhaust	\$250K	LexCarb
•Water from Air	\$1M	Mesosystems/Honeywell/Hamilton
•Water Monitoring	\$2M	Wayne State Univ
•NBC Water Treatment	\$2M	ACTI

FY 05 CONTRACT ACTIONS

Existing Contracts / 05 Actions

MOBILITY TECHNOLOGIES

•Power & Energy SIL	\$1.5M	SAIC
•Test Platform Study	\$30K	SWRI
•Dynamic Sys Integration Lab	\$650K	DSIL
•Fuel Cell Consult	\$55K	TPS
•HE HMMWV Upgrade	\$1.5M	DRS
•High Pwr/Energy Li Ion Batteries	\$3M	SAFT
•6 X 6 Development	\$1.5M	NATC

FY 05 CONTRACT ACTIONS

Existing Contracts / 05 Actions

MOBILITY TECHNOLOGIES – CONTINUED...

•Super-lattice SiC	\$200K	Titan
•Fastening & Joining Research	\$1.1M	Oakland Univ
•Combat Vehicle Research	\$3.5M	CTC
•FCS Engine Development	\$3.7M	Recardo
•FCS Dual Engine Development	\$1M	APT/FEV
•FCS Engine Development	\$3.7M	Honeywell
•FCS Engine Development	\$2M	DDC/MTU
•FCS Engine High Temp Tribology	\$200K	SWR
•Li Ion Battery Chemistry	\$7.5M	TJ Technologies

FY 05 CONTRACT ACTIONS

Existing Contracts / 05 Actions

BRIDGING COUNTERMINE TECHNOLOGIES

•Lightweight Vehicle Mounted Countermine	\$455K	KRC
•Advanced Modular Composite Bridge	\$6.2M	Seeman
•Field Repair Composite Bridges	\$750K	Alphastar
•Innovative Wet Gap Crossing Technologies for FCS	\$120K	Triton
•Biodegradable Matting / Temp Roadways	\$70K	Texas Research
•Rapidly Deployable Gap Defeat Tech for FCS	\$1.6M	TBA

FY 05 CONGRESSIONAL ADDS

Approximately \$152M in Projects

- Low Temperature Research Center
- Partnership for Next Generation of Vehicle
- University based Automotive Research Center
- Adv High Power Rechargeable Stored Energy
- Advanced Electric Drives
- Advanced Energy and Manufacturing Technology
- Affordable Low Temp High Performance Adv Rechargeable Stored Energy Device
- Army Trailer Technology Insertion
- Advanced Vehicle Life Consumption & Maintenance Prognostics
- Mobile Thermal Perimeter Surveillance System
- Battlefield Production of Hydrogen for Fuel Cell Vehicles
- CALSTART Defense Adv Transmission Technology
- Center for Tribology and Coatings
- Compact Pulsed Power for Defense Applications
- Distributed Transportable Synthetic Fuel
- Flexible JP-8 Pilot Plant Program
- Future Hybrid Vehicle Systems
- Light Utility Vehicle
- Military Wheeled Vehicle Electronic Architecture Integration

FY 05 CONGRESSIONAL ADDS

Continued...

- Multi-purpose Utility Vehicle Reconfiguration
- Nano-Eng Materials for High Performance Armor
- Rapid Prototyping
- SmarTruck
- Stoichiometric Explosive Detector System
- Unmanned Vehicle Control Technologies
- Unmanned Vehicle Surveillance & Sensor System
- Wireless Sensors for Vehicle Maintenance
- Advanced Mobile Micro Grid Program
- Advanced Army Modular Composite Bridge
- Advanced Powertrain and Intelligent Control System for M-Gators
- Advanced Thermal Management Controls
- Aluminum Lightweight Structures
- Armored Composite Cab Development
- Battery Charging Technology
- CAV Technology Transition
- Combat Vehicle Research
- Composite Vehicle Research
- Development of Logistical Fuel Processes
- Digital Humans & Virtual Reality

FY 05 CONGRESSIONAL ADDS

Continued...

- Electro chromatic Material Windows
- Fastening and Joining Research
- FREEDOM Software Environment
- Fuel Cell Ground Support Equipment Demonstration
- High Strength Powder Metal Gears for Transmissions
- IMPACT Concept Modeling Tool Suite
- Innovative Materials for Infrastructure Security
- International Commercially Based Logistical Support Trucks
- In-Theater Systems Development
- Military Vehicle Technologies
- Virtual Systems Integration Lab
- Hybrid Vehicle Test Maintenance
- Mobile Hydrogen Infrastructure (MHI)
- Modular Logistics Transport Technology
- Next Generation Non-Tactical Vehicle Propulsion
- N-Step Enabled Manufacturing Cell for FCS
- Opposed Piston Opposed Cylinder (OPOC) Engine for APU
- Pacific Rim Corrosion Program
- Rapid Optimization of Commercial Knowledge (ROCK)
- Rotary Multi-fuel APU
- Secure Pervasive Computing for Advanced Control Vehicles
- Tactical Vehicle Design Tools

FUTURE TACTICAL TRUCK SYSTEMS ADVANCED CONCEPT TECHNOLOGY DEMONSTRATION

(FTTS ACTD)

Status:

Maneuver Sustainment Variants (MSVs)

- Awarded (2) Phase I Modeling & Simulation Contracts - \$4.9M Total
- Oshkosh Truck and Stewart Stevenson

Utility Variants (UVs)

- Pending Contract Award in October 04

FY 05 Planned Activities:

- MSV and UV Prototype Build Downselect in June 05 (limited to Phase I awardees)
- Phase II Prototype Build Contract Awards in July 05 - \$25M

NATIONAL AUTOMOTIVE CENTER POC: MR. PAUL SKALNY, 586.574.5436

SMALL BUSINESS INNOVATION RESEARCH (SBIR)

FY 04 /05

- 54 Phase I Awards for FY 04 Valued at \$3,757,579
- 39 Phase II Selections for FY05 valued at \$28,525,066 with an additional \$1,687,843 in Options

SMALL BUSINESS INNOVATION RESEARCH (SBIR)

➤ Pre-Solicitation – MAY 2005

➤ Open Solicitation – JULY 2005

TARDEC SBIR Managers: Mr. Alex Sandel, 586.574.7545

Mr. Jim Mainero, 586.574.8730

FY 05 COMPETITIVE SOLICITATIONS

Other possible Solicitations may be released in FY 05

VETRONICS TECHNOLOGY AREA:

POC: MR. DAVE THOMAS, 586.574.6160

- Autonomous Robotics Technology Integration \$3M
- Human Robot Integration Program \$300K

SURVIVABILITY TECHNOLOGY AREA:

POC: MR. STEVEN SCHEHR, 586.574.5780

- Technical Support \$500K

FY 05 COMPETITIVE SOLICITATIONS

Other possible Solicitations may be released in FY 05

MOBILITY TECHNOLOGY AREA:

POC: MR. DAN HERRERA, 586.574.6411

➤Dynamic SIL	\$1M
➤Electric Motors and Inverters	TBD
➤Bi-Directional DC-DC Converter	\$488K
➤FCS Engines	TBD

TARDEC ACQUISITION SUPPORT TEAM REPRESENTATIVE:

MS. CASSANDRA MAXWELL, 586.753.2619

<http://contracting.tacom.army.mil/opportunity.htm>